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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,661	11/03/2000	Kazuto Okazaki	4296-123	6250

7590 12/18/2002

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EXAMINER

RIDLEY, BASIA ANNA

ART UNIT	PAPER NUMBER
1764	8

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/705,661

Applicant(s)

OKAZAKI ET AL.

Examiner

Basia Ridley

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

- ✓ 1. Applicant's election with traverse of Group II, drawn to an apparatus is acknowledged. The traversal is on the ground(s) that as search for apparatus for producing acrylic acid would uncover the methods for producing said acrylic acid. This is not found persuasive because establishing that the inventions are classified in different classes and/or subclasses establishes that a serious burden exists on the examiner if restriction is not required. The restriction requirement is still deemed proper and is therefore made FINAL.
- ✓ 2. Claims 1-7 are withdrawn from consideration pursuant to 37 CFR 1.142(b) as being drawn to non-elected invention, there being no allowable generic or linking claim.

Drawings

- ✓ 3. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see P7/L18-22). See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
- ✓ 4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show a thick and thin lines as described in the specification (P1/L30-32 and P9/L28-32). Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they

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include the following reference sign(s) not mentioned in the description:

- Fig. 2, ref. no. "23", "28" and "L1" - "L10"; *lead lines w/out*
- Fig. 3, ref. no. "L1-1" and "L1" - "L11".

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- lines 1 - 10, with reference to Fig. 2;
- lines 1 - 11, with reference to Fig. 3.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "23" has been used to designate both a controller for a heater 2, as shown in Fig. 3 and a not labeled element associated with supply system 1, as shown in Fig. 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "28" has been used to designate both a pump for liquid coolant tank 27, as shown in Fig. 3 and a not labeled element associated with supply system 1, as shown in Fig. 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

9. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. The objections listed below are merely exemplary.

Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

10. The disclosure is objected to because of the following informalities:

- inconsistent numbering of elements throughout the specification: e.g. "line 4" and "reactor 4", "line 5" and "absorbing column 5", "line 1" and "liquid coolant supplying system 1", "line 8" and absorbing solvent cooler 8", etc.

Appropriate correction is required. Applicant is reminded that no new matter shall be added.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claim(s) 8-10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim(s) 8 recite(s) the limitation(s) "the production", "the latent heat" and "the resultant gasified propylene", throughout the claim. There is insufficient antecedent basis for said limitation(s) in the claim(s).

Claim(s) 9 recite(s) the limitation(s) "said means for preparing (...)", "the temperature" and "the flow", throughout the claim. There is insufficient antecedent basis for said limitation(s) in the

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claim(s).

Claim(s) 10 recite(s) the limitation(s) "said means for preparing (...)". There is insufficient antecedent basis for said limitation(s) in the claim(s).

13. Claim(s) 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the cooperative relationship between all recited elements of the apparatus. For example what is the relationship between means for gasifying and evaporator? To what parts of the apparatus are heat exchangers connected? The examiner suggests clearly defining all structural elements and process streams which enter said elements and which leave said elements. By doing so the apparatus elements will be connected by various process streams.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claim(s) 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Admitted Prior Art (as shown in Fig. 1 of instant specification and as described on P1/L15-P5/L29) in view of Oswalt et al. (USP 4,769,998).

Regarding claim(s) 8-10, Admitted Prior Art disclose(s) similar apparatus for production of acrylic acid or acrolein comprising:

- means (3) for gasifying liquefied propylene and/or propane (14) introduced into an

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evaporator (3) by supplying a coolant (17) to said evaporator (3) and, at the same time, preparing a chilled coolant (P3/L19-25) by recovering the latent heat of the liquefied propylene and/or propane (14);

- means (4) for subjecting the resultant gasified propylene and/or propane to a catalytic gas phase oxidation reaction thereby preparing a gas containing acrylic acid or acrolein (Fig. 1);
- wherein said means (3) for preparing said chilled coolant includes means (24) for adjusting the temperature of said coolant (17) or means for adjusting the flow thereof (Fig. 1).

Admitted Prior Art discloses that a coolant supplied to said evaporator is chilled by evaporating liquefied propylene and/or propane (Fig. 1) and the reference discloses that said apparatus comprises various heat exchangers which use a liquid coolant (Fig. 1 and P2/L24-P3/L18). The reference does not explicitly disclose that a liquid coolant can be supplied to said evaporator, chilled there to prepare a chilled coolant and that said chilled coolant can be used in said heat exchangers in the apparatus and later recirculated back to the evaporator.

Oswalt et al. teaches that it is known to prepare a process coolant, which can be used as a coolant in heat exchangers in various processes (C1/L9-19), by passing a liquid coolant through an evaporator (6). Chilled coolant from said evaporator (6) is used in various processes and spent process coolant is being recirculated back to the evaporator (6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a liquid coolant in the evaporator of Admitted Prior Art to prepare a chilled coolant and to use said chilled coolant in heat exchangers in the apparatus for production of acrylic acid or acrolein, as taught by Oswalt et al., for the purpose improving operation efficiency. Said modification would merely amount to using an available coolant rather than a coolant which has to be prepared in auxiliary process, therefore saving an operation cost of said auxiliary process.

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16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

17. In view of the foregoing, none of the claims are allowed.

18. The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1764.

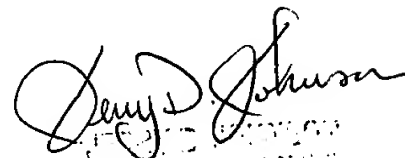
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (703) 305-5418. The examiner can normally be reached on Monday through Thursday, from 8:30 AM to 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (703) 308-6824.

The fax phone number for Group 1700 is (703) 872-9311 (for Official papers after Final), (703) 872-9310 (for other Official papers) and (703) 305-6078 (for Unofficial papers). When filing a fax in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Basia Ridley
Examiner
Art Unit 1764



BR

December 14, 2002